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REPORT BY THE U.S.

General Accounting Office

Status Of The Department Of Energy's Implementation Of The Nuclear Waste Policy Act Of 1982 As Of December 31, 1984

In March 1984 the Senate Committee on Energy and Natural Resources requested that GAO report quarterly on the status of the Department of Energy's progress in implementing the Nuclear Waste Policy Act of 1982. This second quarterly report covers program activities from October through December 1984. In particular, it discusses delays in meeting key requirements of the act and highlights several management initiatives taken by the Office of Civilian Radioactive Waste Management, the office responsible for implementing the act.

The report also discusses the status of the Nuclear Waste Fund, the separate fund that receives fees from the owners of operating nuclear power plants and other waste-producing facilities and finances the development and construction of the nation's first geologic repository for commercial nuclear waste. During the quarter, the fund had revenues sufficient to cover all financial obligations.

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RESOURCES, COMMUNITY,
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DIVISION

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The Honorable James A. McClure
Chairman, Committee on
Energy and Natural Resources
United States Senate

The Honorable J. Bennett Johnston
Ranking Minority Member
Committee on Energy and Natural Resources
United States Senate

In response to your request, this report provides the status of the Department of Energy's implementation of the Nuclear Waste Policy Act of 1982 for the quarter ending December 31, 1984. It discusses the department's progress in meeting legislated deadlines; summarizes the status of the Nuclear Waste Fund; and discusses management reorganization, information system development, and federal relations with states and tribes.

We are also sending copies to appropriate legislative committees, federal agencies, and other interested parties.

J. Dexter Peach
Director

GENERAL ACCOUNTING OFFICE
REPORT TO THE COMMITTEE ON
ENERGY AND NATURAL RESOURCES
UNITED STATES SENATE

STATUS OF THE DEPARTMENT OF ENERGY'S IMPLEMENTATION OF THE NUCLEAR WASTE POLICY ACT OF 1982 AS OF DECEMBER 31, 1984

D I G E S T

The Nuclear Waste Policy Act of 1982 established a national policy for the long-term safe disposal of spent nuclear fuel and other high-level radioactive nuclear materials.[1] The act requires the Department of Energy (DOE) to develop and construct permanent repositories to dispose of such materials and to conduct related research, development, and demonstration projects. It also requires the owners and generators of highly radioactive materials who have a contract with DOE for disposal of those materials to pay fees into a special fund established to finance all costs associated with developing and operating repositories. The act established the Office of Civilian Radioactive Waste Management within DOE (hereafter called the DOE Waste Office) to administer the waste disposal program.

In March 1984 the Senate Committee on Energy and Natural Resources requested that GAO report quarterly on the status of DOE's progress in implementing the act. This second quarterly report focuses primarily on the activities of the DOE Waste Office during the quarter ending

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[1]High-level radioactive nuclear waste includes spent fuel, the used uranium fuel that has been removed from commercial nuclear reactors, and high-level radioactive waste resulting from its reprocessing. The act also requires DOE to use one or more of the repositories developed under the act to dispose of high-level radioactive waste resulting from the production of nuclear weapons material unless the President finds that a separate repository is required for the disposal of such defense wastes.

Tear Sheet

GAO/RCED-85-65
JANUARY 31, 1985

December 31, 1984.[2] It also highlights internal management initiatives, including the DOE Waste Office's program for managing its relations with affected states and Indian tribes, and it discusses the current status of the Nuclear Waste Fund. Most of the information contained in this report was obtained from DOE Waste Office officials and from reports and other documents prepared by the office. Financial data were obtained directly from DOE's financial information system. (See p. 4 for a complete description of the objectives, scope, and methodology for this report.)

DELAYS HAVE OCCURRED IN MEETING KEY REQUIREMENTS OF THE ACT

The Nuclear Waste Policy Act of 1982 established several program requirements and set deadlines for DOE to develop and construct geologic waste disposal repositories. In particular the act calls for DOE to recommend by January 1985 at least three sites to be the subject of characterization studies--detailed geologic reviews.

Before the recommendation of sites for characterization studies can be made, two key requirements of the act must be completed: (1) guidelines to be used to evaluate proposed sites and (2) environmental assessments of potential sites. The act also calls for DOE to have completed an overall strategy document, called a mission plan, by June 1984.

In December 1984 DOE issued final siting guidelines--17 months after the act required them to be completed. By December 31, 1984, environmental assessments and the mission plan

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[2]The Nuclear Waste Policy Act of 1982 requires GAO to report to the Congress on the results of an annual audit of the DOE Waste Office. For more information, see GAO's first annual audit report, Department of Energy's Initial Efforts to Implement the Nuclear Waste Policy Act of 1982 (GAO/RCED-85-27, Jan. 10, 1985). Also, see the first quarterly report, Status of the Department of Energy's Implementation of the Nuclear Waste Policy Act As of September 30, 1984 (GAO/RCED-85-42, Oct. 19, 1984).

had yet to be completed. DOE Waste Office officials do not expect the final environmental assessments to be completed until June 20, 1985; thus, the recommendations of three sites for characterization studies will not be made until mid-1985, after the final assessments are completed.

Siting guidelines issued in December 1984

The act required siting guidelines to be completed by July 1983. Following reviews by the public, including interested states and Indian tribes; the formal concurrence by the Nuclear Regulatory Commission, as required by the act; and a lengthy internal DOE review, DOE issued its final siting guidelines on December 6, 1984--nearly 17 months late. The guidelines establish performance objectives for a geologic repository system and specify primary geologic considerations for site selection and the technical elements that qualify or disqualify a site for recommendation. The guidelines, along with the final environmental assessments, will be used to identify and recommend three potential sites for characterization studies. (DOE had formally identified nine potential areas in six states for the first repository in February 1983.) (See p. 7.)

Draft environmental assessments issued for public comment in December 1984

During the last quarter of fiscal year 1984, the DOE Waste Office placed highest priority on completing draft environmental assessments for each of the nine potential repository sites. DOE originally expected to complete the drafts in August 1984. On December 20, 1984, DOE released the draft assessments for public comment. After a 90-day comment period, DOE expects to evaluate the comments and release the assessments in final form on June 20, 1985.

Each draft assessment contains an analysis chapter ranking each site in comparison with other sites, according to various criteria, such as local climatic and geohydrologic conditions, that are spelled out in the siting guidelines. In the draft assessments, DOE proposed recommending to the President the following

Tear Sheet

sites (listed in alphabetical order by state) for detailed site characterization studies: Yucca Mountain in Nevada, Deaf Smith County in Texas, and Hanford in Washington. The proposed recommendations are preliminary and subject to further review and comment. (See p. 8.)

Mission plan delayed

The development of a comprehensive report called the mission plan has been delayed. The purpose of the mission plan is to establish a schedule of events leading toward accomplishing the objectives of the act and to provide the information necessary to make decisions to carry out the repository program. The act calls for the plan to have been completed by June 1984. The comments received on the draft plan that was released in May 1984 are extensive and have yet to be resolved because the DOE Waste Office staff has concentrated on preparing the draft environmental assessments for comment. DOE Waste Office officials now expect to complete the plan in April 1985. (See p. 9.)

OTHER ACTIVITIES PURSUED DURING THE QUARTER

To meet other requirements of the act during the quarter ending December 31, 1984,

--DOE reviewed the draft report of an advisory panel established to examine alternative management approaches for the nuclear waste program. The draft report listed as a preferred option the establishment of a public corporation to manage the waste program. The final report is expected in January 1985. The Secretary of Energy plans to form a review group to analyze the report. Under the act the secretary was to have transmitted a report on alternative management approaches to the Congress by January 1984. (See p. 11.)

--DOE reviewed comments received on its August 1984 draft report dealing with defense high-level wastes. The report recommended that defense high-level nuclear waste be disposed of in the same repository as commercial waste primarily because of reduced costs estimated to total $1.5 billion. DOE expects to deliver

its report to the President in February 1985. Although the act requires the President to decide by January 7, 1985, on whether a separate repository is needed for defense high-level wastes, DOE does not expect the President to make a decision until after the report has been reviewed. (See p. 12.)

--DOE issued a transportation business strategy options document for comment. The act requires that the private sector be involved in the transportation system for high-level wastes to the largest extent possible. Toward that end, the strategy document is designed to discuss the scope of business activities in a waste transportation system and promote discussion and comments from interested parties. Following a period of review and evaluation, the DOE Waste Office expects to issue a final business plan by the end of 1985. (See p. 13.)

--DOE received comments on its August 1984 draft screening methodology document for selecting a site for the second repository. This draft document identified 17 states that contain areas potentially suitable for a second repository site. In connection with the second repository program, DOE, in December 1984, also issued revised draft regional environmental and geologic characterization reports for review and comment by the 17 states. (See p. 13.)

--DOE worked on a scheduled June 1985 proposal for a monitored retrievable storage system.[3] The final decision on how such a system will be integrated into the repository program has

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[3]The act provides that the storage of highly radioactive wastes in monitored retrievable storage facilities, usually thought of as above-ground or slightly below-ground storage facilities, is an option for management of nuclear wastes. The design and actual use of such facilities and their integration within the repository program is to be defined in the June 1985 proposal.

Tear Sheet

yet to be made, however, and may affect the content and timing of the proposal. (See p. 14.)

LITIGATION INITIATED IN RESPONSE TO PROGRAM ACTIONS

Four lawsuits were filed during the quarter by states, private associations, and individuals in reaction to DOE Waste Office activities. In one suit, the state of Nevada, following the disapproval of its fiscal year 1985 request for financial assistance, requested emergency injunctive relief that would have prevented the release of the draft environmental assessments. The request for injunctive relief was denied by the U.S. Court of Appeals for the Ninth Circuit.

In three other cases, courts have been asked to review the siting guidelines and the Texas site selection process. Possible resolution of these cases could involve the invalidation of the guidelines or the Texas site screening process. At this time the courts have not yet addressed the merits of the suits. The DOE General Counsel could not estimate when the cases would finally be adjudicated or if more cases on these activities might be initiated. (See p. 15.)

STATUS OF SELECTED MANAGEMENT INITIATIVES

During the quarter ending December 31, 1984, the DOE Waste Office followed through on several management initiatives taken in fiscal year 1984 and improved its financial reporting system. In particular:

--Progress was made toward defining the requirements for an automated data base and other aspects of a new internal program management system. DOE Waste Office officials expect the new management system to be implemented incrementally throughout calendar year 1985. (See p. 21.)

--The DOE Waste Office has begun implementing a new financial-reporting system that will provide more detailed cost and obligation data. (See p. 22.)

--The certified public accounting firm hired by the DOE Waste Office completed its audit

of the Nuclear Waste Fund financial statements for fiscal years 1983 and 1984 in December 1984. The final report is expected to be available in February 1985. (See p. 23.)

Federal/state relations evolving

The DOE Waste Office's management of its relations with affected states and Indian tribes is evolving as the program moves into the site characterization phase and as the office attempts to improve communication through seminars, state information offices, and other means. While DOE Waste Office officials said that relations with individual states are improving as a result of recent initiatives, representatives from four states told GAO that they are dissatisfied with the office's efforts to consult and cooperate with their states under the act. These states--Mississippi, Nevada, Texas, and Washington--include the three states where the draft environmental assessments have proposed sites for characterization studies. In particular, the representatives indicated that their states were not adequately involved in the preparation of the environmental assessments. (See pp. 24 to 26.)

Under the act the DOE Waste Office provides financial assistance to affected states and tribes to aid them in reviewing waste program activities, providing information to residents, and engaging in other related activities. Since the act was signed in January 1983, the office has awarded grants totaling about $13.4 million to 28 different states, Indian tribes, and national organizations. As of December 31, 1984, another $20 million in grant requests was pending. (See p. 27.)

STATUS OF THE NUCLEAR WASTE FUND

The act established a separate fund to be maintained in the U.S. Treasury to finance the nuclear waste program. The fund received about $258 million from funds appropriated before the act was passed.

The fund accumulates two types of fees paid by the owners and generators of highly radioactive nuclear waste. The first is a 1-mill fee to be

Tear Sheet

paid for each kilowatt hour of nuclear power generated beginning April 7, 1983. By September 1983 the generators of nuclear waste had paid about $73.6 million into the fund as a result of this fee. During fiscal year 1984, the fund's first full year of operation, an additional $329.5 million was paid. In the quarter ending December 31, 1984 (fiscal year 1985), about $90.4 million was paid into the fund. (See p. 28.)

The fund is also to receive a one-time fee from the owners of high-level nuclear waste that was generated before April 7, 1983. None of the one-time fees have yet been paid. Under their contracts with DOE, owners have until June 1985 to determine which of three methods they will use to pay this fee, estimated to total about $2.3 billion.

The DOE Waste Office makes disbursements from the fund to pay for program activities. Funds cannot be disbursed without prior congressional appropriations. The DOE Waste Office spent $46.1 million for various program activities during the quarter ending December 31, 1984. About 70 percent of these costs was for repository development activities, including preliminary site studies and the preparation of site environmental assessments. (See p. 29.)

Most nuclear waste fund obligations--93 percent in the quarter ending December 31, 1984--are made to contractors who perform a wide variety of program activities. As of December 31, 1984, the DOE Waste Office had contracted directly with 112 contractors for about $605.5 million since the program began. The office obligated about $136.3 million to contractors in the quarter ending December 31, 1984, alone. (See p. 31.)

As of December 31, 1984, the DOE Waste Office had unpaid obligations of about $213.2 million and a cash balance of about $242.8 million. In addition, the office must repay the U.S. Treasury about $258.4 million plus interest for the appropriations it had received. DOE Waste Office officials told GAO that repayment to the Treasury depends upon when the owners of nuclear

waste pay their one-time fees. Until such time the Waste Office must pay interest on the debt. (See p. 33.)

AGENCY COMMENTS

GAO did not obtain formal agency comments on a draft of this report. However, GAO informally provided DOE program officials with a draft of this report, discussed it with them, and made appropriate revisions on the basis of their comments. GAO also informally discussed the nature of the DOE Waste Office's state relations program with representatives from four states involved in the site-selection process for the first repository--Mississippi, Nevada, Texas, and Washington. Their comments are included in the federal/state relations section of the report.

Contents

		Page
DIGEST		i
CHAPTER		
1	INTRODUCTION	1
	Overview	2
	Objectives, scope, and methodology	4
2	STATUS OF OCRWM ACTIVITIES DIRECTED TOWARD LEGISLATED REQUIREMENTS DURING THE OCTOBER-DECEMBER 1984 QUARTER	6
	Final siting guidelines issued December 6, 1984	7
	Draft environmental assessments released December 20, 1984	8
	Final mission plan has been delayed	9
	Other activities directed toward the act's requirements	10
	Status of litigation regarding OCRWM activities	15
3	STATUS OF SELECTED OCRWM MANAGEMENT ACTIVITIES	18
	OCRWM organization and staffing adjustments	18
	Development underway of an internal program management system	21
	Financial data now reported in more detail	22
	Certified public accountant audit of nuclear waste fund nears completion	23
	Federal/state relations evolving	24
4	STATUS OF THE NUCLEAR WASTE FUND AS OF DECEMBER 31, 1984	28
	Fund receipts and costs	28
	OCRWM contract activity	31
	Overall status of the nuclear waste fund	33
	Other funding sources	34
APPENDIX		
I	Nuclear waste program budget and reporting codes	36
II	Work breakdown structure tasks	38

Page

ILLUSTRATIONS

OCRWM organizational chart as of December 31, 1984 19

OCRWM staffing levels as of December 31, 1984 20

State/Indian tribe assistance provided by DOE since passage of NWPA 27

Status of Nuclear Waste Fund costs for quarter ending December 31, 1984 29

Costs by work breakdown structure for the first and second repositories for quarter ending December 31, 1984 30

Summary of OCRWM contract activity 32

Status of Nuclear Waste Fund as of December 31, 1984 33

Costs for civilian radioactive R&D program 35

ABBREVIATIONS

DOE	Department of Energy
EPA	Environmental Protection Agency
GAO	General Accounting Office
MRS	monitored retrievable storage
NRC	Nuclear Regulatory Commission
NWPA	Nuclear Waste Policy Act of 1982
OCRWM	Office of Civilian Radioactive Waste Management
R&D	research and development

CHAPTER 1

INTRODUCTION

Enacted on January 7, 1983, the Nuclear Waste Policy Act of 1982 (NWPA) (Public Law 97-425) established a comprehensive, national program directed toward the construction of geologic repositories for the long-term disposal of highly radioactive nuclear waste. The Department of Energy (DOE) intends to begin accepting title to the nuclear waste for disposal under provisions of the act in January 1998. The act established several requirements and related deadlines aimed at accomplishing that objective. It also established within DOE the Office of Civilian Radioactive Waste Management (OCRWM) to carry out the provisions of the act and established the Nuclear Waste Fund to finance the program.

The act requires us to report to the Congress on the results of an annual audit of OCRWM. Our first annual audit report,[1] issued on January 10, 1985, focused on the problems DOE had in initiating the program and establishing its financial basis. Our second annual audit is underway and focuses on problems OCRWM has had in meeting the act's requirements.

On March 26, 1984, the Senate Committee on Energy and Natural Resources requested that we also report, on a quarterly basis, on the status of OCRWM activities to implement the act. Our first quarterly report,[2] issued on October 19, 1984, discussed actions that took place during the last quarter of fiscal year 1984 (July 1-Sept. 30). This second quarterly report addresses the status of OCRWM activities during the quarter ending December 31, 1984. It discusses the status of OCRWM program activities directed toward meeting the act's legislatively mandated milestones, especially those that are past due or immediately upcoming, the status of selected internal management actions, and the status of the Nuclear Waste Fund.

This chapter provides an overview of OCRWM's activities and discusses the report's scope and methodology. Chapter 2 discusses OCRWM's activities and focuses on those directed toward meeting legislatively mandated milestones. Chapter 3 discusses the status of selected internal management actions and includes a description of OCRWM's financial assistance program to states and Indian tribes and a discussion of OCRWM's state relations program.

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[1] Department of Energy's Initial Efforts to Implement the Nuclear Waste Policy Act of 1982 (GAO/RCED-85-27, Jan. 10, 1985).

[2] Status of the Department of Energy's Implementation of the Nuclear Waste Policy Act As of September 30, 1984 (GAO/RCED-85-42, Oct. 19, 1984).

Chapter 4 describes the status of the Nuclear Waste Fund as of December 31, 1984, and includes a list of contracts awarded by DOE in support of waste disposal activities.

OVERVIEW

The safe disposal of spent nuclear fuel[3] and other highly radioactive nuclear waste in the United States has been a matter of national concern since the first civilian nuclear reactor began generating electricity in 1957. These materials, which remain potentially hazardous for tens of thousands of years, must be isolated from the environment until their radioactivity decays to levels that will pose no significant threat to people or the environment. Electric utilities have accumulated over 10,000 metric tons (over 22 million pounds) of highly radioactive spent nuclear fuel. Most of it is in the form of spent fuel rods that are stored in deep pools of water at the reactors. Some utilities anticipate shortages of spent fuel storage facilities in the next few years. DOE estimates that by the year 2000, approximately 50,000 metric tons of radioactive spent fuel will have accumulated.

Enacted on January 7, 1983, the NWPA requires DOE to develop deep geologic repositories to accommodate the long-term safe disposal of nuclear waste and to conduct related research, development, and demonstration projects. The act also established OCRWM within DOE to administer the waste disposal program. Costs are to be paid from the Nuclear Waste Fund, which receives fees from owners of operating nuclear power plants and owners of high-level nuclear waste generated in the past. The full cost of the program was estimated in July 1984 to be $20.9 billion to $23.3 billion (in 1983 dollars). This estimate includes the development, construction, and decommissioning costs of two geologic repositories projected to extend through the year 2032.

The act authorized DOE to enter into contracts with all generators and owners of highly radioactive materials. As of December 31, 1984, DOE had contracts with 64 owners, covering 147 reactors. The contracts establish (1) the terms and conditions under which DOE will dispose of these materials and (2) the procedures to follow in collecting fees to provide for full recovery of the government's disposal costs.

The contracts require the payment of a one-time fee for spent fuel generated before April 7, 1983, and a 1-mill-per-kilowatt-hour fee for electricity generated by nuclear power beginning

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[3]Spent nuclear fuel is the used uranium fuel that has been removed from a nuclear reactor. Spent fuel and other types of highly radioactive wastes are difficult to dispose of because of their high toxicity and long radioactive life, and because they produce heat.

April 7, 1983. The 1-mill fee covers the generation of spent fuel during the ongoing production of nuclear power and is to be paid every 3 months. The one-time fee is to be paid by the owners of the nuclear reactors or other facilities that generated high-level nuclear waste prior to April 7, 1983. Under the contracts, the owners are to individually select one of three methods of paying this fee and inform DOE by June 30, 1985, which method each will use. The total amount expected from the one-time fee is about $2.3 billion.[4]

OCRWM, located at DOE headquarters in Washington, D.C., is supported by DOE's field operations offices. In particular, OCRWM project offices in Columbus, Ohio; Las Vegas, Nevada; and Richland, Washington, are responsible for conducting repository development activities in the three main geological media under consideration for selection as the first repository site.[5] The Richland office is primarily working with basalt, while the Columbus and Las Vegas offices are examining salt and tuff sites, respectively. These offices in turn rely largely on contractors and national laboratories to conduct certain activities.

In February 1983 DOE formally identified nine potential areas in six states for the first repository. After an analysis of available data and completion of a number of requirements, the act calls for the Secretary of Energy to recommend three sites to the President by January 1985 for further geologic testing, called site characterization studies. These studies are to include the construction of exploratory shafts for tests at repository depth.

As discussed in more detail in chapter 2, OCRWM has not yet completed all of these requirements. Final siting guidelines, which establish performance objectives for a geologic repository system were issued in December 1984. Draft environmental assessments were also issued in December 1984. However, environmental assessments of the potential sites that will identify the three sites to be recommended for site characterization studies have not been finalized. These assessments are to evaluate each site in terms of the siting guidelines and the requirements of the act and provide the basis for determining whether a site is suitable for site characterization studies, including the probable environmental impact of such studies. The draft assessments include site proposals for characterization studies. DOE now expects to complete the assessments in June 1985 and to formally recommend three sites for site characterization soon thereafter. After detailed

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[4]For a more detailed discussion of the fee payment program under the act, see our first annual audit report (GAO/RCED-85-27).

[5]Geologic media are the underground rock formations in which the radioactive waste will be placed. The formations now being considered as host rocks are basalt lava, a molten material from volcanoes or fissures; tuff, a hard, compacted ash from volcanoes; and rock salt, a sedimentary rock formed by the evaporation of water from a saline solution.

site characterization studies are completed for these sites, the President, under the law, is to recommend to the Congress by March 31, 1987, one site for repository construction.

The act also requires the Secretary of Energy to recommend to the President, by July 1, 1989, at least three potential sites for a second repository. A final site recommendation is to be made to the Congress by March 31, 1990. As described in chapter 2, OCRWM is continuing a site-screening process for the second repository.

OBJECTIVES, SCOPE, AND METHODOLOGY

On March 26, 1984, the Senate Committee on Energy and Natural Resources requested that we report on a quarterly basis the status of OCRWM activities to implement the act. This second quarterly report discusses OCRWM activities during the quarter ending December 31, 1984. It (1) highlights OCRWM's activities directed toward meeting the act's legislatively mandated milestones especially those that are already past due or are forthcoming in the next several months, (2) describes selected OCRWM internal management activities, and (3) provides the status of the Nuclear Waste Fund.

To obtain information on the status of OCRWM program activities and selected management initiatives, we reviewed DOE and OCRWM program documents, publications, correspondence files, and studies and interviewed OCRWM managers and operating personnel responsible for planning and managing activities associated with the research and development of the waste repositories. In particular we reviewed the final repository siting guidelines, the draft environmental assessments, DOE's draft report concerning whether defense radioactive wastes should be disposed of in a separate repository, and the draft report of DOE's advisory panel on alternative means of financing and managing the nuclear waste program.

To obtain information on Nuclear Waste Fund receipts and disbursements, we contacted officials responsible for DOE's financial information system. We also obtained financial, contract, and personnel data directly from the system and from DOE's Energy Information Administration.

Our review was performed in accordance with generally accepted government auditing standards; however, we did not verify data obtained from DOE's financial information system--a task which could not be accomplished within the time frame of this report. Also, as requested by the Senate Committee on Energy and Natural Resources office, we did not obtain official agency comments; nor did we obtain official comments from state or Indian tribe officials or other interested parties on our draft report. We informally provided OCRWM program officials, however, with a draft of this report and discussed it with them. We made appropriate revisions on the basis of their comments. We also

informally discussed the nature of OCRWM's state relations program with representatives from four states involved in the site-selection process for the first repository--Mississippi, Nevada, Texas, and Washington. Their comments are included in the federal/state relations section of the report.

CHAPTER 2

STATUS OF OCRWM ACTIVITIES DIRECTED TOWARD LEGISLATED REQUIREMENTS DURING THE OCTOBER-DECEMBER 1984 QUARTER

This chapter discusses DOE activities during the quarter ending December 31, 1984, directed toward meeting legislative requirements of NWPA. It focuses on those requirements with deadlines that had already passed or are upcoming in calendar year 1985. In particular, the chapter discusses the status of OCRWM's efforts directed toward completing environmental assessments and siting guidelines to be used to evaluate potential sites for the first repository. These two requirements must be accomplished before DOE can recommend three sites to the President for detailed geologic characterization studies. In addition, the chapter discusses the status of another key requirement of the act--the mission plan. The mission plan will discuss overall program strategy and was to have been issued by June 1984.

Final siting guidelines were issued on December 6, 1984, and draft environmental assessments for nine potential repository sites were released for public comment on December 20, 1984. Delays in completing the environmental assessments have necessitated postponement of the recommendation for site characterization studies. OCRWM officials told us in December 1984 that they expect the assessments to be completed in June 1985 and the recommendation to be made in mid-1985. Issuance of the mission plan has been delayed until April 1985.

Between October and December 1984, DOE also performed other activities specifically directed toward meeting legislative requirements of the act, including

--considering an advisory panel's draft report on alternative management approaches to the waste program,

--completing a report on the placement of high-level defense wastes,

--issuing for comment a transportation business strategy options document,

--continuing to develop a screening process to be used to identify specific sites for a second repository, and

--preparing a proposal for a monitored retrievable storage (MRS) system.

The following sections describe the status of each of these activities as well as litigation that has been initiated as the result of OCRWM activities.

FINAL SITING GUIDELINES ISSUED DECEMBER 6, 1984

NWPA requires DOE to recommend to the President, by January 1985, three sites to be the subject of detailed geologic studies called site characterization studies. Section 112 of NWPA required DOE to issue by July 7, 1983, siting guidelines approved by the Nuclear Regulatory Commission (NRC). OCRWM plans to use these guidelines as a basis for nominating at least five sites from the nine identified as potentially acceptable at the beginning of the program and for recommending three sites for characterization studies as required by the act. After site characterization studies are completed, DOE plans to again evaluate each site in terms of the siting guidelines.

DOE issued proposed siting guidelines for public comment in February 1983. After revising the guidelines on the basis of comments received, DOE again issued draft guidelines in May 1983. After making further revisions, DOE conferred with NRC and then formally sent the guidelines to NRC for concurrence in November 1983. After providing the public with an opportunity to comment, reviewing the comments, and meeting with DOE to discuss its conditions for concurrence, NRC formally approved the guidelines in July 1984. The guidelines were next submitted to the Office of Management and Budget, which approved them in September 1984.

Following that approval, the guidelines were subjected to what OCRWM officials termed an intensive review within DOE. In particular, DOE's Office of General Counsel; Assistant Secretary for Congressional, Intergovernmental and Public Affairs; Assistant Secretary for Policy, Safety and the Environment; and Office of the Secretary reviewed the guidelines in light of their importance in determining the sites that will be recommended for characterization. The internal reviews focused on the preamble to the guidelines, which discusses the uses and limitations of the guidelines. According to DOE, the guidelines themselves did not change after NRC approval.

The guidelines were issued in final form on December 6, 1984. They establish performance objectives for a geologic repository system and describe how DOE will implement its site-selection process. In particular, they specify the primary geologic considerations for site selection and the technical elements that qualify or disqualify a site for nomination. These include

--geohydrologic setting and geochemical characteristics of a site, which must be compatible with nuclear waste containment and isolation;

--characteristics of the rock that must be capable of accommodating the thermal, chemical, mechanical, and radiation stresses expected; and

--climatic and erosion conditions, which must not lead to radioactive releases greater than allowed.

The guidelines also discuss other factors that are to be considered during site selection, such as proximity of a repository to population centers and national resources, and the cost and impact of transporting the radioactive waste. In addition, the guidelines reflect provisions in the act that require the Secretary to consider different geologic media when recommending sites.

DRAFT ENVIRONMENTAL ASSESSMENTS RELEASED DECEMBER 20, 1984

Section 112 of NWPA requires OCRWM to prepare environmental assessments for potential repository sites and specifies that these assessments must include the probable impact of activities related to site characterization studies, such as drilling the exploratory shafts necessary to collect geologic data and ways to avoid such impact. The assessments, along with the guidelines, will be used to determine which sites will be recommended for site characterization.

Completion of the draft assessments was originally scheduled for August 1984. According to OCRWM officials, completion of these assessments has been the top priority of OCRWM management for the last 6 months. Delays were encountered during the preparation process as OCRWM worked to reach agreement on approaches to the technical areas between DOE headquarters, field personnel, and contractors working on the assessments. Furthermore, other program changes, in particular, the decision to require two exploratory shafts instead of one during site characterization studies, necessitated a reworking of the assessments.

On December 20, 1984, OCRWM released draft assessments for the nine identified sites. The assessments are available for comment by the public, affected states and Indian tribes, other federal agencies, and private groups for a 90-day period until March 20, 1985. During this comment period, OCRWM will conduct public hearings in the vicinity of each proposed site. OCRWM officials expect to adequately address all comments in about 3 months and release the final assessments by June 20, 1985. They expect the Secretary of Energy to recommend three sites for characterization studies in mid-1985 after the assessments are completed.

Each assessment contains about 1,000 pages and addresses technical factors such as surface and rock characteristics. The assessments also determine whether each site is suitable for further study and compare the site with the others according to various criteria defined in the siting guidelines. In the draft assessments, DOE found all nine sites suitable for further study

and proposes to nominate five of the nine sites for site characterization. The five are (in alphabetical order by state) Richton Dome in Mississippi, Yucca Mountain in Nevada, Deaf Smith in Texas, Davis Canyon in Utah, and Hanford in Washington. On the basis of various rankings of the sites, DOE proposes in the draft assessments to recommend to the President for site characterization studies the Nevada, Texas, and Washington sites. This proposal is subject to review and comment, as are the rest of the draft assessments.

FINAL MISSION PLAN HAS BEEN DELAYED

Section 301 of NWPA requires that DOE prepare a mission plan--a comprehensive report that is to provide sufficient information to permit informed decisions on the repository program and related research. The plan is also required to contain a schedule of milestones directed toward meeting the legislated milestones of the act.

The act required that DOE submit, by April 7, 1984, a draft mission plan to the states, affected Indian tribes, NRC, and other government agencies for their comments. The act called for the final mission plan to be submitted to the appropriate committees of the Congress by June 7, 1984. On May 8, 1984, DOE distributed the draft mission plan for review and comment. As of December 31, 1984, DOE had not issued the plan; however, DOE officials expect to release the final plan in April 1985.

More than 100 sets of comments addressing the mission plan were received from states, federal agencies, private organizations, and individuals. The comments are extensive, and many of the key OCRWM personnel who need to respond to the comments were redirected to work on the environmental assessments. The personnel are expected to begin work on the mission plan comments in January 1985.

According to the draft plan, the basic objectives of the program are to (1) ensure waste acceptance for disposal by January 31, 1998, (2) establish geologic repositories for waste disposal, and (3) assist utilities in storing spent fuel prior to federal acceptance. The primary strategy to achieve these ends is to site and construct a repository ready for operation by 1998. In the event of delays, DOE would arrange continued storage at the utilities or, in the case of extended delays, storage at a monitored retrievable storage facility pending transfer to a repository. In any event, according to the draft plan, DOE will begin accepting spent fuel in 1998, according to a waste acceptance schedule that has yet to be determined. That schedule will be designed to permit owners and generators of spent fuel to establish firm planning schedules for determining their own onsite interim storage needs.

Section 301 of NWPA requires DOE to respond to specific objections contained in the comments by either revising the mission plan or explaining in the Federal Register why the revisions were not made. Only NRC had objections to the mission plan. Its objections included the identification of areas where the mission plan is not clear about how or whether regulatory requirements will be met.

In addition to NRC objections, other comments received on the mission plan also identify several areas of major concern, including (1) DOE's plans for accepting defense wastes, (2) the adequacy of DOE's plans for waste transportation, and (3) the detail and scheduling analysis for the second repository.

OCRWM has reviewed these comments and has categorized them by program area. The comments have been sent to the appropriate program officials, who will draft responses. These responses will be incorporated into a comment response document that will be issued with the mission plan. OCRWM program officials currently expect to issue both documents to the appropriate congressional committees in April 1985.

After the mission plan is issued, OCRWM plans to issue a project decision schedule. Section 114 of NWPA requires DOE to prepare a project decision schedule containing a sequence of deadlines for all federal agency actions and portraying the optimum way to complete the repository. The act does not establish a deadline for its completion. An OCRWM official told us that the final project decision schedule should be available 3 to 4 weeks after the mission plan is issued.

OTHER ACTIVITIES DIRECTED TOWARD THE ACT'S REQUIREMENTS

DOE actions were also directed toward a number of other legislative requirements during the quarter. One involved a past due requirement and another pertained to a January 1985 requirement:

--An advisory panel, formed to study alternative approaches to managing the waste program held its last meeting in November 1984 and transmitted its draft report to DOE. At the end of the quarter, DOE officials said that they expected to receive the panel's final report in January 1985. They also said that the Secretary of Energy planned to form a group to review the report before transmitting his formal report, required by the act to have been completed by January 1984, to the Congress.

--DOE's Office of Defense Programs received and analyzed comments on its report on the placement of high-level nuclear defense wastes in preparation for the President's January 1985 decision on the subject.

Other activities during the quarter were directed toward requirements of the act that are forthcoming. In anticipation of the need for developing a transportation program for moving the nuclear wastes to the repository and/or storage sites, OCRWM released a draft transportation business strategy options document for comment. In addition, steps were taken to develop the process to be used to screen regions to ultimately identify potential sites for a second repository, and work progressed on the preparation of OCRWM's proposal for a monitored retrievable storage system. The following sections describe these activities.

Advisory panel's preferred option is that a public corporation manage the waste program

Section 303 of NWPA requires the Secretary of Energy to perform a study of alternative approaches to managing the construction and operation of all civilian radioactive waste management facilities. NWPA specifically requests that the study consider the feasibility of establishing a private corporation to manage the waste program. NWPA required the results of the study be submitted to the Congress by January 7, 1984.

DOE decided that an advisory panel would prepare the study to lend credibility, expertise, and a variety of viewpoints to the issue. It selected 13 panel members with varied professional/institutional interests and expertise.[1] The panel's selection was not made, however, until December 1983. The panel's final report is not expected to be sent to DOE until January 1985.

The panel held its final meetings in November and presented its draft report to DOE in November 1984. The panel's preferred long-term option is the establishment of a public corporation to manage the high-level radioactive waste program. According to the draft report, the corporation should be run by a seven-member board of directors, appointed by the President, and confirmed by the Senate, serving staggered terms of 7 years, and meeting on an as-needed basis. An advisory council would be appointed to deal exclusively with siting issues. The corporation's chief executive officer, selected by and reporting to the board of directors, would be responsible for day-to-day corporate operations. In addition, the corporation would be exempt from all federal civil service requirements. The panel believes that this type of management structure would best provide stability, credibility, internal flexibility, and political immunity to the management and disposal of high-level radioactive waste.

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[1]See app. II in our first quarterly report for a list of those individuals who served on the panel.

Upon receipt of the panel's final report, a review group of selected DOE officials will consider the report. In addition, as required by the act, the secretary must consult with the Director, Office of Management and Budget, and the Chairman of NRC before transmitting his final report to the Congress. OCRWM officials would not estimate when the report--a year overdue in January 1985--might be formally transmitted to the Congress.

DOE is completing a defense waste report as required by NWPA

Section 8 of NWPA requires the President, by January 7, 1985, to evaluate and determine whether defense high-level radioactive waste should be disposed of in a defense-only repository. The President's evaluation, being prepared by DOE's Office of Defense Programs, is to consider factors relating to cost-efficiency, public acceptability, health and safety, regulation, and transportation. Unless the President determines otherwise, defense waste will be disposed of in the commercial repository under development. DOE expects its final report to reach the President in February 1985. According to DOE, the President will probably not make the decision until after the report has been reviewed.

DOE's Office of Defense Programs, responsible for the defense waste evaluation, distributed for comment on August 10, 1984, a draft report entitled An Evaluation of Commercial Repository Capacity for the Disposal of Defense High-Level Waste. After considering all the above factors, the draft report recommends that commercial and defense wastes be deposited in a single repository. The report states that it would cost an additional $1.5 billion to build two separate repositories--one for defense waste and another for commercial waste. The report also states that none of the other factors evaluated, such as public acceptability, resulted in a significant advantage for either option.

Although the comments were to be received no later than September 24, 1984, DOE considered all valid comments received as of November 30, 1984. The Office of Defense Programs received comments from 36 sources, including other DOE offices, states, and other agencies. Generally, the comments concurred with the recommendation that the wastes be commingled, although several questioned whether the report included all of the defense waste that might be stored in the repository. DOE is preparing a comment response document addressing all comments for distribution to all external sources who provided comments.

OCRWM is developing a transportation business plan

Section 137 of NWPA states that transportation of spent fuel under the act shall involve the private sector, to the largest extent possible, and take advantage of existing private transportation management expertise. Toward that objective, DOE is preparing a business plan for acquiring and operating a transportation system that will support the repositories. The plan is to be a summary document of information concerning DOE's expected business methods and is expected to contain a strategy for developing and operating the transportation system. It is expected to provide information on contracting procedures, equipment requirements, facility requirements, funding availability, and other areas necessary for conducting business.

In October 1984 OCRWM issued its Transportation Business Plan: Strategy Options Document, which it considers an interim step in producing a final business plan. This interim plan is intended to provide pertinent background information, describe legislation and policies concerning transportation under NWPA, and discuss the projected scope of business activities. It is also to provide a basis for interaction with other interested parties, public and private. OCRWM has distributed over 2,600 copies of the interim plan to interested parties, including the governors of all 50 states, public utilities commissions, various trade and business organizations, energy groups, and private citizens. In addition, DOE published the plan in the Federal Register in December 1984.

On the basis of the comments received on the interim plan, OCRWM officials expect that state, tribal, and public concerns--as well as industry requirements and interests--will be identified. According to the interim plan, OCRWM plans to issue a final transportation business plan by the end of 1985.

Status of DOE actions to site a second repository

Section 112 of NWPA requires the Secretary of Energy, by July 1, 1989, to recommend to the President, three candidate sites for a second repository. DOE is currently investigating other rock formations, primarily crystalline, as the geologic host for the second repository. NWPA also permits sites characterized but not selected for the first repository, as well as those not nominated for the first repository, to be considered for the second repository.

DOE's site-screening process for the second repository is focusing on geographic areas of decreasing size to determine whether they contain sites suitable for the development of a repository. The general screening process consists of three phases--national survey, regional studies, and area studies.

The screening process is currently in the regional phase, which involves compiling information from existing literature on the geology and environment of each region.

In May 1983 DOE issued a national survey of geologic literature on crystalline rocks. It identified three regions--the Northeastern, North Central, and Southeastern--as having crystalline rock formations suitable for a repository. These regions include parts of 17 states. The regions and states are:

Northeastern	North Central	Southeastern
Connecticut	Michigan	Georgia
Maine	Minnesota	Maryland
Massachusetts	Wisconsin	North Carolina
New Hampshire		South Carolina
New Jersey		Virginia
New York		
Pennsylvania		
Rhode Island		
Vermont		

In September 1984 DOE issued for comment a draft document describing the process used to narrow the number of sites under consideration. Along with the regional environmental and geologic characterization reports, this document will be used to identify specific areas within the three regions where detailed field studies will be conducted.

On December 11, 1984, DOE issued revised draft regional environmental and geologic characterization reports for review and comment by the states. The revisions were based on more than 2,000 comments received on an earlier draft of the May 1983 draft regional reports. Major changes in the revised reports present data on the disqualifying factors and regional screening variables used in the regional screening process. These changes are:

--including data relevant to the screening process,

--addressing key environmental data in more detail,

--refining the overall geologic data to provide consistent and comparable information on rock bodies in all three regions, and

--improving the regional maps and regional information.

OCRWM is preparing a proposal for a monitored retrievable storage facility

Section 141 of NWPA states that the long-term storage of high-level radioactive waste or spent nuclear fuel in monitored

retrievable storage (MRS) facilities is an option for providing safe and reliable management of such waste or spent fuel. These facilities are generally thought of as ground-level or slightly below ground-level storage facilities. The act directs that DOE complete, by June 1, 1985, a detailed study of the need for and feasibility of one or more MRS facilities and submit the proposal to the Congress. DOE is currently preparing the proposal, including design specifications and cost estimates. Most of the work on the proposal is being performed by contract under the overview of the Richland Operations Office.

DOE has selected three site types for the designs, mainly on the basis of weather conditions--arid, warm-wet, and cold-wet. DOE has also completed a draft siting plan that will identify siting criteria and possible screening approaches for identifying sites. This plan also delineates all activities and schedules, from site screening to selection. One legislative limitation on site selection is that the MRS facility cannot be constructed in a state that has a site approved for site characterization for the first or second repository until that site is no longer a candidate for development as a repository.

The act also requires that the following documents accompany the MRS proposal to the Congress:

--An environmental assessment analyzing the relative advantages and disadvantages of the various combinations of sites and designs.

--A plan to allocate the costs for the construction and operation of the facility by the generators and owners of the waste and spent fuel that will be stored in the MRS.

--A plan for integrating the MRS with other storage and disposal facilities, i.e., the deep geologic repositories.

DOE also expects to submit safety assessments and a licensing plan with the proposal. In addition, formal comments on the plan from NRC and EPA will accompany the proposal to the Congress.

As of December 31, 1984, DOE officials expected to submit the proposal to the Congress by June 1, 1985, as required by the act. However, they cautioned that the decision as to how the MRS system will be integrated into the repository program and what role it will play has yet to be made. This decision could affect the scope and timing of the final proposal.

STATUS OF LITIGATION REGARDING OCRWM ACTIVITIES

According to DOE's Office of General Counsel, four lawsuits were filed in federal circuit courts of appeals during the quarter

by states, private associations, and individuals as a result of OCRWM program activities. The following sections describe each case. DOE's Office of General Counsel would not speculate on how long it might take to resolve any of these cases or if others on these activities might be initiated.

Nevada v. Hodel

On December 14, 1984, the state of Nevada filed in the U.S. Court of Appeals for the Ninth Circuit, an emergency petition for a preliminary injunction seeking the court to order DOE to (1) approve Nevada's application for financial assistance for fiscal year 1985 and (2) remit to the state the unexpended portion of its fiscal year 1984 grant. Nevada asked the court in the alternative to prohibit DOE from engaging in activities directed toward recommending sites for characterization studies, including the issuing of the draft environmental statements until DOE approves Nevada's 1985 grant application and remits to Nevada the unexpended portion of its 1984 grant.

DOE had disapproved $1.5 million of Nevada's $3.5 million 1985 grant request because the $1.5 million would be used for independent data-collection activities (e.g., drilling boreholes) that DOE said were not appropriate at this stage of the site-selection process. Upon disapproval of part of the 1985 grant proposal, Nevada withdrew the entire grant proposal and filed its lawsuit.

The court denied the state's request for emergency relief. As of December 31, 1984, DOE and the state were preparing briefs to address the merits of Nevada's application for financial assistance.

Environmental Policy Institute, et al.
v. Hodel

On December 18, 1984, the Environmental Policy Institute and six other environmental groups petitioned the Ninth Circuit Court to review the final siting guidelines to determine if they are in accordance with the act. The plaintiffs have requested the court to invalidate the siting guidelines. However, DOE officials are confident that OCRWM has followed the act and therefore such a decision is unlikely. The parties are in the process of preparing briefs.

Texas v. DOE;
Devin v. DOE

In separate actions filed in December 1984, the state of Texas and several private individuals and associations petitioned the Fifth Circuit Court of Appeals to review the screening process completed in November 1984 to narrow the size of two potential repository sites in Texas. The plaintiffs are seeking the court review in hopes that it will invalidate the screening process.

One of these sites was subsequently identified in the draft environmental assessments as a candidate for site characterization studies. The two actions were consolidated by the court as Texas v. DOE. According to DOE officials, the agency plans to file a motion to dismiss in early February 1985.

CHAPTER 3

STATUS OF SELECTED OCRWM MANAGEMENT ACTIVITIES

NWPA established OCRWM to carry out DOE responsibilities under the act. In October 1983 the Secretary of Energy formally approved and activated OCRWM, and in May 1984 a director was appointed and confirmed by the Senate.[1] In our first quarterly report (dated October 19, 1984), we discussed several internal initiatives that OCRWM had taken during the last quarter of fiscal year 1984 to improve its management of activities directed toward accomplishing the objectives of the act. These included reorganization and staffing changes, beginning development of an internal program management system with an automated information system, contracting with a certified public accountant to audit the nuclear waste fund, and issuing guidelines for its state assistance program. In the following sections, we follow up on the status of these initiatives, address OCRWM's recent upgrading of data for its financial management information system, and discuss its program of coordination with affected states and Indian tribes.

OCRWM ORGANIZATION AND STAFFING ADJUSTMENTS

OCRWM reorganized in July 1984 to provide what the director believed would be a more efficient structure for implementing NWPA. In November 1984 several organizational adjustments were made to further define and clarify the assignment of functions and responsibilities in OCRWM's Office of Policy, Integration and Outreach, Office of Administrative Management, and Office of Storage and Transportation Systems.

At the same time, OCRWM clarified specific responsibilities within its various offices for (1) socioeconomic analysis regarding policy issues, (2) an integrated data base for spent fuel, and (3) the OCRWM-wide program management system. In addition, the functions of the Office of Storage and Transportation Systems were more specifically defined and the following changes in organization nomenclature were made:

--The Office of Administrative Management became the Office of Resource Management.

--The Finance Division became the Finance and Cost Analysis Division.

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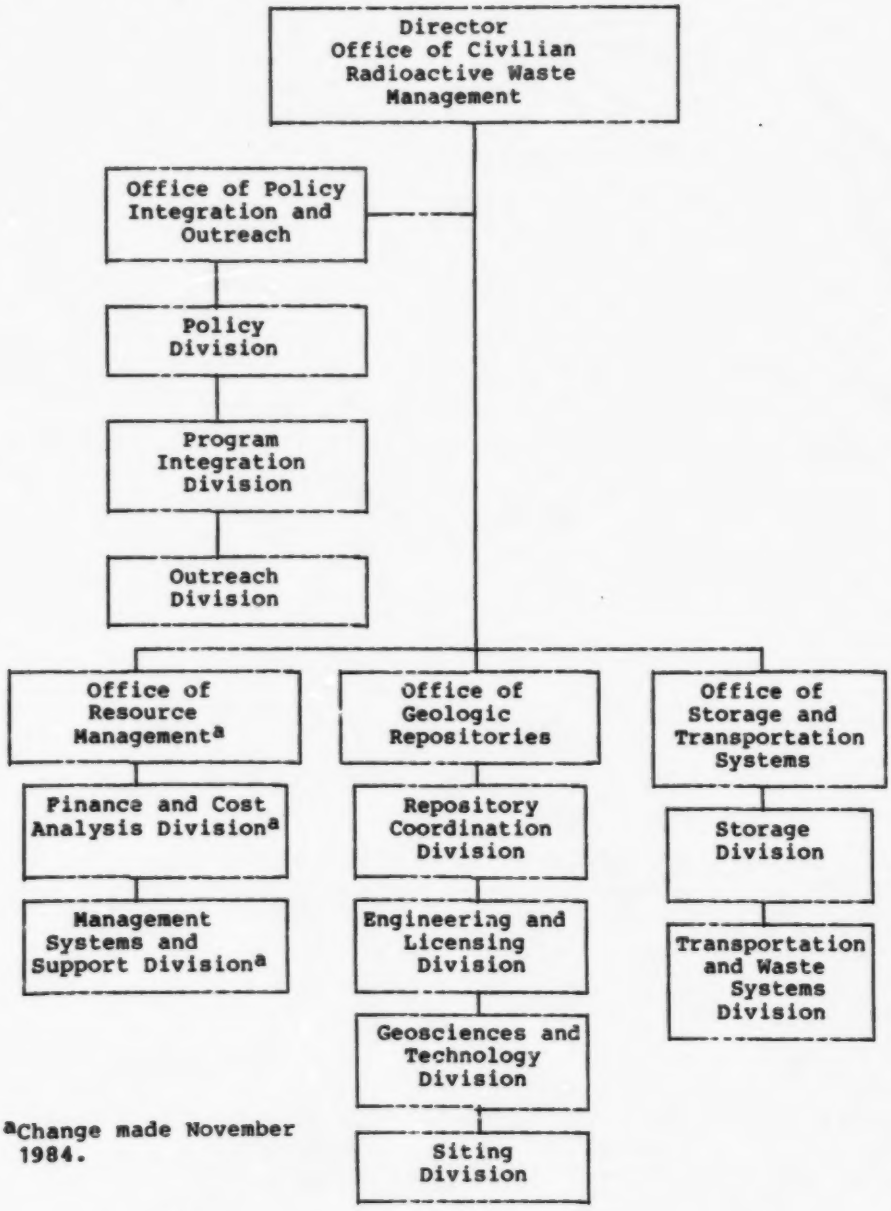
[1]For a detailed discussion of DOE's efforts to establish a separate organization to manage the waste disposal program, see our first annual audit report (GAO/RCED-85-27, Jan. 10, 1985).

--The Management Support Division became the Management Systems and Support Division.

According to officials of the Office of Resource Management, these changes have not required the reassignment of personnel but have eliminated potential duplication of effort and have better assured accountability. OCRWM's organization chart as of December 31, 1984, is shown below.

OCRWM Organizational Chart as of December 31, 1984


Director Office of Civilian Radioactive Waste Management
Office of Policy Integration and Outreach
Policy Division
Program Integration Division
Outreach Division
Office of Resource Management[a]
Finance and Cost Analysis Division[a]
Management Systems and Support Division[a]
Office of Geologic Repositories
Repository Coordination Division
Engineering and Licensing Division
Geosciences and Technology Division
Siting Division
Office of Storage and Transportation Systems
Storage Division
Transportation and Waste Systems Division

[a]Change made November 1984.

Source: DOE.

As reported in our last quarterly report, OCRWM made progress during fiscal year 1984 in filling staff positions both at headquarters and in the field project offices. At the end of fiscal year 1984, eight vacancies existed at headquarters and four in the field. At that time, OCRWM officials said that they were attempting to fill all headquarters vacancies and were encouraging the field offices to do the same.

As the table below shows, personnel ceilings for fiscal year 1985 for headquarters offices remained about the same as for fiscal year 1984, but the ceiling for field offices rose from 100 to 125. Office of Resource Management officials said that they expected the ceilings to be raised in January 1985 to 131 for headquarters and about 145 for field offices, pending Office of Management and Budget approval. The actual number of personnel had risen by nine for headquarters and by four for the field since September 1984.

OCRWM Staffing Levels as of December 31, 1984

Program office	Full-time personnel ceiling		Number of full-time personnel on board	
	FY 84	FY 85	September 84	December 84
Director's office	4	4	4	6
Institutional relations office	8	-	-	-
Policy office[a]	-	12	20	21
Management office	31	31	24	27
Repository office	42	42	29	31
Storage and transportation office	15	15	15	16
OCRWM headquarters total	100	104	92	101
Field offices:				
Chicago	58	64	54	55
Richland	28	34	32	33
Nevada	14	27	10	12
Field total	100	125	96	100
Program total[b]	200	229	188	201

[a]Policy office was created in July 1984 and included the Institutional Relations Office.

[b]Total does not include staff time used by other DOE offices and charged to the Nuclear Waste Fund. In fiscal year 1984, this totaled about 17 staff years.

Source: DOE.

DEVELOPMENT UNDERWAY OF AN INTERNAL PROGRAM MANAGEMENT SYSTEM

OCRWM has always lacked a centralized internal management system to assist its managers in directing the complex and varied activities associated with the waste program. Its Office of Resource Management is in the process of developing an overall program management system to enable OCRWM managers to better plan, monitor, and analyze all elements of its program as parts of an integrated waste management system. The program management system will include all planning documents required by NWPA, including the mission plan and a project decision schedule, plus an annual operating plan and a systems engineering management plan. It will also include an automated management information system.

As of December 31, 1984, an internal OCRWM task force had completed a draft outline and was working on the overview chapter of the program management system manual. In addition, a concept paper for a new program management information system was nearing completion.

An OCRWM official told us that he expected that the overview chapter of the manual would be completed and approved by the end of January 1985. Following internal approval, he expects OCRWM to begin implementing various components of the system. He also said that progress on developing an annual operating plan has been delayed because it became apparent that as originally conceived it would duplicate the current DOE OCRWM budget information preparation process. A management-by-objective planning system for OCRWM headquarters is to be developed to supplement the annual operating plan developed as part of the budget process.

According to the draft manual outline, the new program management system will be primarily management-oriented, dealing with planning, implementing, monitoring, reporting, and evaluating all facets of the program, from safety and health to systems engineering. The objectives of the program management system as defined by OCRWM officials include

--providing management guidelines, policies, and procedures for all aspects of the program;

--monitoring and reporting program progress against all legislative and major DOE milestones;

--analyzing and forecasting the impact of engineering approaches and management policies on contract costs and schedules;

--providing engineering analysis of the requirements of the waste disposal system under NWPA and the mission plan; and

--providing total life-cycle costs to determine the adequacy of fees charged to owners of radioactive waste.

The automated management information system is expected to provide financial data and management support in other areas such as tracking milestones and program status reports. It is planned that the data base will build on DOE's financial information system as described in the following section. Office of Resource Management officials said that they plan to implement the automated system incrementally and complete it by the end of 1985.

FINANCIAL DATA NOW REPORTED IN MORE DETAIL

At the start of fiscal year 1985, OCRWM project offices began reporting financial data into DOE's financial information system monthly using revised budget and reporting program codes. (See app. I for the budget and reporting codes developed for the waste program.) Expenditures and obligations under some of these program codes, such as for first and second repository development, are now reported under more detailed categories called tasks. The tasks are collectively called the work breakdown structure. The various tasks of the work breakdown structure are defined in appendix II.

Prior to fiscal year 1985, data contained in the work breakdown structure had been available at the various project offices but had not been collected by the financial information system. Part of the reason was that the data were not always comparable because work breakdown structure task definitions used by the various contractors and project offices were not uniform. During the latter part of fiscal year 1984, OCRWM developed objectives and definitions for the work breakdown structure tasks in order to collect more uniform and accurate program data.

Use of the work breakdown structure should provide more uniform and detailed data on various aspects of the nuclear waste program. Under the new system, for example, first and second repository data are reported as separate cost programs. Previously, first and second repository data were accumulated under one program, with second repository data consolidated together in an "other" category. In another example, monitored retrievable storage is now a separate cost program broken into six cost and obligation categories; previously, only a total was reported for the whole program. OCRWM finance officials said that eventually information even more minutely defined than the work breakdown structure will be readily available to OCRWM staff through its own information system. Chapter 4 contains cost and obligation data as reported using the new budget and reporting classification codes and the work breakdown structure.

Cash management plan completed

In another step to improve its management of nuclear waste fund resources, OCRWM issued a cash management plan in November 1984 to set forth cash management requirements for the Nuclear Waste Fund. The plan defines the procedures and practices directing the use of the fund's cash resources. Generally, the plan describes methods to (1) accelerate collections, (2) optimize the timing of disbursements, (3) eliminate excessive letter-of-credit cash balances, and (4) invest excess cash to maximize interest earned. OCRWM finance officials believe that the plan should increase the efficiency with which OCRWM manages the financial resources of the Nuclear Waste Fund.

CERTIFIED PUBLIC ACCOUNTANT AUDIT OF NUCLEAR WASTE FUND NEARS COMPLETION

In September 1984 DOE signed a $1.3 million contract with a certified public accounting firm--Main Hurdman--to provide auditing services for the fund for fiscal years 1983 and 1984. The scope of work defined in the contract included examining the financial statements of the fund and determining whether the statements presented the financial position and results of OCRWM operations in accordance with generally accepted accounting principles and whether laws and regulations affecting financial statements had been complied with.

Under the contract's scope of work, OCRWM was to provide draft financial statements and reports to Main Hurdman and, in turn, Main Hurdman was to provide OCRWM with audited financial statements in a final report. The financial statements are to be used by OCRWM as an integral part of its annual report to the Congress, to be issued in March 1985. Main Hurdman was to notify the Director, OCRWM, of any proposed adjustment to the financial statements and reach final conclusions by December 15, 1984.

The accounting firm initiated its work in September 1984 and performed financial and compliance reviews at DOE headquarters offices in Washington, D.C., and Germantown, Maryland, and in DOE field offices at Columbus, Ohio; Chicago, Illinois; Las Vegas, Nevada; San Francisco, California; and Albuquerque, New Mexico. The teams also conducted limited reviews of DOE contracts with its major contractors. They reviewed various contract documents on a test basis, looking at financial statements, invoice billings, contract compliance, and, in some areas, subcontractor support. The accounting firm working with the OCRWM financial staff also played a large role in developing the financial statements for the waste fund.

The accounting firm completed the audit for both fiscal years 1983 and 1984 in December 1984; it had not, however, completed a final report by the end of December 1984. OCRWM finance officials said that Main Hurdman's final audit report would be released in February 1985.

Finance officials estimate that when the report is delivered, OCRWM will still have about 2,000 staff hours (of a total 11,700 hours) of contracted time with the accountant that can be used to provide audit assistance in specific areas. The contract stipulates that Main Hurdman may be asked to give professional opinions and special expertise for short-term projects in special situations, such as interpreting accounting principles, verifying electricity-generation data, and evaluating the waste fund accounting systems. OCRWM officials were not certain if or how the 2,000 staff hours would be used or if Main Hurdman would perform an audit of 1985 financial statements, under optional provisions of the contract. Since OCRWM's contract with Main Hurdman is a cost plus fixed-fee contract, any reduction in total hours used would result in reduced costs.

FEDERAL/STATE RELATIONS EVOLVING

NWPA (1) requires DOE to obtain comments from states, Indian tribes, and the public on the mission plan and other program documents as they are developed, (2) strongly encourages the completion of consultation and cooperation agreements between OCRWM and states and Indian tribes affected by site characterization studies, (3) provides means for states and tribes to disapprove or veto site selections, and (4) provides for grant assistance to states and tribes to finance state and tribal activities associated with site-selection and repository development. In addition to formal federal/state activities, the conduct of site selection activities and future site characterization studies requires almost constant coordination between federal and state officials. Given the prominence that NWPA prescribes to the affected parties, probably no one factor is more crucial to the successful completion of the nuclear waste program than the maintenance of good relations between the federal offices responsible for implementing the act and affected states and Indian tribes.

OCRWM's relations with affected states and tribes can best be described as evolving. OCRWM Office of Policy, Integration and Outreach officials told us that they are convinced that communication has improved as they and the states have become more informed about each others concerns. Also, they believe that their ongoing efforts to improve communication, as described below, plus the fact that fewer states will be involved as the program moves along, will aid federal/state relations. Although we did not systematically contact individual state or tribe representatives to confirm OCRWM's assertions of improving relations, representatives from four states involved in the site-selection process for the first repository--Mississippi, Nevada, Texas, and Washington--told us that consultation and cooperation have not been satisfactory. In particular, they believe that DOE has not adequately involved them in the development of major aspects of the program, such as the preparation of environmental assessments. Two of the representatives also said that while recent OCRWM efforts to improve communication have been useful to

identify problems, little has actually been done to address state concerns, such as formally defining consultation and cooperation with states and Indian tribes under the act.

As of the end of the quarter, no documented internal policy or plan existed to direct federal/state relations other than grant award and consultation and cooperation agreement guidelines. Headquarters officials communicate directly with individual states or tribes usually when a problem involving office policy occurs, or when a state or tribe presses for higher level involvement. In addition, headquarters officials get directly involved in resolving state and Indian comments on major program documents, such as the draft mission plan released for public comment.

Most direct communication on the nuclear waste program, especially concerning specific sites or technical problems, takes place between state officials and the DOE project offices. The project offices also are involved in overseeing the award of financial assistance through grants to individual states and tribes. OCRWM officials said that OCRWM has also encouraged the establishment of "store front" information offices in individual states to provide direct communication about the waste program. As of the end of the quarter, offices had been established in Louisiana, Mississippi, and Utah. In each case, the offices were staffed by DOE contractors.

At the headquarters level, the Office of Policy, Integration, and Outreach has taken some steps that officials believe have helped identify potential problem areas and enhanced federal/state relations. For example, it concluded a series of three meetings in November 1984 with state representatives, conducted with the aid of a professional facilitator, to identify state concerns and enhance communication methods. During the quarter, it also appointed a director for its Outreach Division, who is presently preparing an outreach strategy document. In addition, the office has begun scheduling "national" meetings to inform interested parties about forthcoming program activities in order to obtain early feedback about potential problem areas. For example, in an October 1984 meeting in Atlanta, Georgia, the office discussed plans to define potential areas for the second repository program with interested states.

Only one state--Washington--has been negotiating with OCRWM officials on a consultation and cooperation agreement, as defined in the act. (Such agreements are optional before sites are formally selected for site characterization studies.) Negotiations, begun in early 1984, were mainly handled by the Hanford project office, with assistance from headquarters personnel. Presently, a major barrier to complete the agreement exists: resolution of the issue of liability in the event of a nuclear accident. Washington State believes the Price-Anderson Act, which establishes limits on the government's liability in the event of certain nuclear accidents, does not provide adequate protection. As of the end of

the quarter, the state legislature had scheduled hearings on the consultation and cooperation agreement for March 1985.

OCRWM Office of Geologic Repositories officials expect the Washington State agreement, when finalized, to set the precedent for future consultation and cooperation agreements. They indicated, however, that each will be handled individually, since different technical and political circumstances will have to be considered in each case.

Grant assistance provided

Under NWPA, DOE can provide financial assistance through grants to affected states and tribes to aid them in

--reviewing activities for potential economic, social, public health and safety, and environmental impacts;

--developing requests for impact assistance;

--participating in monitoring, testing, and evaluating site characterization activities;

--providing information to residents; and

--requesting information from and making comments to the Secretary of Energy.

To attain more consistency, uniformity, and equity in state assistance, OCRWM prepared revised guidelines for grant awards in September 1984. Grant funds are usually provided for 1 year upon approval by the cognizant project or headquarters office with concurrence by the Office of Geologic Repositories. The grantee is required to provide periodic progress reports to the project office or cognizant headquarters office on the activities funded by the grant. These reports, along with state audits, are the means by which OCRWM assures itself that grant funds are spent in accordance with the act.

Since enactment of NWPA, grants totalling about $13.4 million had been awarded to 28 different grantees. OCRWM finance officials told us that another $267,000 in state assistance funds, administered by a contractor, went to individual states in fiscal year 1983 to pay for travel expenses associated with the program, and that $10,000 went to the University of Arizona also in fiscal year 1983 to pay for work related to a symposium. Most of the grants were to individual state governments or Indian tribes; three, however, have been made to national associations representing states or Indian tribes. The following table lists all grants awarded from January 1983 through December 1984.

State/Indian Tribe Assistance Provided by DOE
January 1983 through December 1984

DOE operations office and grantee	Latest grant Date	Latest grant Amount	First quarter FY 1985 obligations	Total obligations from inception
Chicago office:				
Connecticut	11/16/84	$ 133,824	$132,824	$ 328,167
Georgia	11/29/84	154,171	0	112,440
Louisiana	01/04/84	433,000	0	533,319
Maine	02/15/84	26,848	0	98,799
Maryland	02/27/84	[b]	0	31,734
Massachusetts	02/21/84	122,721	0	169,410
Michigan	12/20/84	231,284	0	274,131
Minnesota	03/16/84	189,495	0	361,995
Mississippi	09/27/84	674,980	0	861,372
New Hampshire	12/13/84	[a]	0	89,883
New Jersey	11/07/84	[b]	0	161,716
New York	[a]	71,450	0	246,450
N. Carolina	03/07/84	47,055	0	297,546
Rhode Island	09/28/83	99,525	0	99,525
S. Carolina	12/18/84	223,627	0	251,686
Texas	07/20/84	100,000	0	599,840
Utah	09/27/83	401,688	0	860,183
Vermont	11/16/84	76,338	60,788	113,250
Virginia	07/31/84	41,130	0	41,130
Wisconsin	02/24/84	199,093	0	341,665
Total			193,612	5,874,241
Nevada office:				
Nevada	04/09/84	646,083	0	996,083
Total			0	996,083
Richland office:				
Nez Perce Tribe	12/14/84	508,257	526,568	526,568
Confederated tribe of Umitillas	12/27/84	599,794	552,315	825,012
Washington State (2 grants)	10/12/84	1,681,171	1,681,171	2,717,297
Yakima Indian Nation	12/27/84	1,588,261	902,342	2,056,256
Total			3,662,396	6,125,133
Headquarters:				
National Congress of Amer. Indians	02/29/84	205,000	0	205,000
National Conference of State Legislators	[a]	[a]	0	216,873
National Governors' Association	09/19/82	121,900	0	[a]
Total			0	421,873
Total			$3,856,008	$13,417,330

[a]Data not available at the end of the quarter.

[b]Latest date shown was for grant modification that did not involve additional funding.

Source: Obligation data from DOE's financial information system. Grant dates and amounts from OCRWM.

CHAPTER 4

STATUS OF THE NUCLEAR WASTE FUND AS OF DECEMBER 31, 1984

NWPA established a separate fund, maintained by the Department of the Treasury, to finance the nuclear waste program. The Nuclear Waste Fund accumulates fees paid by the owners and generators of high-level radioactive waste to support the program and disburses funds to finance OCRWM activities. During the first quarter of fiscal year 1985, the fund received about $90.4 million, mostly in the form of fees from nuclear power plant owners and disbursed about $68.8 million for program activities. Most of the disbursements were made to contractors who conduct the bulk of program activities for OCRWM.

OCRWM has three other potential funding sources to support its activities: an Interim Storage Fund, interest income from investments made with excess money in the waste fund, and appropriated funds for generic research not directly related to repository development. It does not anticipate using the Interim Storage Fund, another special fund authorized by the act, in the near future. OCRWM did not invest any funds during the quarter; it developed an investment strategy, however, in anticipation of making investments during the quarter ending March 31, 1985. OCRWM spent about $3.2 million during the quarter in appropriated funds for research not directly related to repository development.

FUND RECEIPTS AND COSTS

As described in chapter 1, DOE has contracted with 64 nuclear power plant owners for the payment of fees into the fund to finance the waste repository program. The fund began receiving fees late in fiscal year 1983, and by the end of that fiscal year, it had collected about $73.6 million. During fiscal year 1984, receipts totaled about $329.5 million. During the first quarter of fiscal year 1985, receipts totaled about $90.4 million.

OCRWM cannot obligate money from the fund without a congressional appropriation. Once an appropriation authorizes use of the fund, OCRWM allocates funds to its various divisions and field offices according to its program budget. OCRWM's appropriation for fiscal year 1985 totals $327.6 million. OCRWM obligates from the fund by awarding contracts and committing resources for its civil service payroll and other program management needs. Actual costs are recorded when invoices are received, and disbursements are recorded when payments are made. Obligations, costs, and disbursements are recorded into DOE's financial information system by the field project offices and program divisions that receive allocations from the fund. For fiscal year 1984 these were recorded under six major cost activities: repository development, federal/state assistance, monitored retrievable storage development, program management and technical support, interest expense, and capital equipment. For fiscal year 1985 the six cost

activities were revised to the five shown in the table below. The table shows costs from the waste fund by each major activity and subactivity, from October 1 to December 31, 1984.

The table shows that most of the funds were spent for the development of the first repository (70 percent). Activities in this category are primarily performed by the field offices and the Office of Geologic Repositories and include (1) the development, verification, and application of geological repository performance assessment models, (2) preliminary site characterization studies, (3) repository design development, and (4) the preparation of environmental assessments.

Status of Nuclear Waste Fund Costs for Quarter Ending December 31, 1984

Funding category	First quarter costs	
	Subactivity	Major activity
First Repository		$32,218,616
Development, construction, operation	$31,118,826	
Capital equipment	1,099,790	
Plant acquisition and construction	0	
Second Repository		4,575,567
Development, construction, operation	4,528,144	
Capital equipment	47,423	
Plant acquisition and construction	0	
Monitored Retrievable Storage		1,481,904
Development, construction, operation	1,481,904	
Capital equipment	0	
Plant acquisition and construction	0	
Program Management and Technical Support		7,391,268
Transportation, management, support	7,391,268	
Capital equipment	0	
Plant acquisition and construction	0	
Debt Service		474,516
Interest expense owed to Treasury	474,516	
Interest expense--appropriated debt	0	
Interest expense--new borrowings	0	
Total	$46,141,871	$46,141,871

Source: DOE's financial information system.

As explained in chapter 3, OCRWM field offices began, in fiscal year 1985, to report costs and obligations into the DOE financial information system by work breakdown structure. Detailed cost data concerning the development, construction, and operation of the first and second repositories are shown in the schedule below.

Costs by Work Breakdown Structure for the First and Second Repositories for Quarter Ending December 31, 1984

Work breakdown structure task	First repository				Second repository		
	Basalt	Tuff	Salt	Total	Crystal-line rock	Sedimen-tary rock	Total
	(million)				(million)		
Systems	$0.88	$ 1.06	$ 0.26	$ 2.20	$0.34	$0.00	$0.34
Waste package	1.79	1.58	.64	4.01	.01	.00	.01
Site	2.17	2.55	3.11	7.38	2.41	.26	2.67
Repository	.70	2.51	2.89	6.10	.11	.00	.11
Regulatory and insti-tutional	.91	.48	2.03	3.42	.33	.00	.33
Exploratory shaft	1.79	.70	.79	3.28	.00	.00	.00
Test facilities	.43	.45	.06	.94	.18	.00	.18
Land acquisition	.00	.00	.00	.00	.00	.00	.00
Program management	.99	1.26	.88	3.13	.65	.00	.65
Financial and techni-cal assis-tance	-.11[a]	.09	.11	.09	.19	.00	.19
Other	.00	.00	.13	.13	.04	.00	.04
Total	$9.55	$10.68	$10.90	$31.13	$4.26	$ .26	$4.52

[a]Negative figure owing to DOE accounting procedure's depicting costs accrued but not paid.

Source: DOE's financial information system.

OCRWM CONTRACT ACTIVITY

NWPA authorizes DOE to make expenditures from the fund for radioactive waste disposal activities, including

--the identification, development, licensing, construction, operation, decommissioning, and post-decommissioning maintenance and monitoring of any repository, monitored retrievable storage facility, or test and evaluation facility constructed under the act;

--research, development, and demonstration activities connected with development of the repositories;

--the administrative cost of the radioactive waste disposal program; and

--any costs that may be incurred by DOE in connection with the transportation, treating, or packaging of spent nuclear fuel or high-level radioactive waste to be disposed of in a repository, to be stored in a MRS facility, or to be used in a test and evaluation facility.

Many of these waste disposal activities have been and are being carried out by contractors. During the first quarter of fiscal year 1985, DOE spent about $40.8 million for contractor services and obligated about $136.3 million, about 93 percent of total obligations during the quarter. Since inception of the fund, OCRWM has obligated about $605.5 million to 112 contractors.

Contracts for the most part are negotiated, awarded, and administered through DOE field offices in Richland, Washington; Chicago, Illinois; and Las Vegas, Nevada; and in DOE headquarters in Washington, D.C. Some contracts are monitored by other DOE operations offices, such as those in Albuquerque, New Mexico, and San Francisco, California. Each of the three main project offices has awarded prime contracts to one or several contractors who perform waste program activities or subcontract for their performance. The table on the next page is a summary of contract activity since inception of the fund. It also lists individually all prime contractors who have incurred costs or obligations of $1 million or more during the quarter ending December 31, 1984. All other contract data are aggregated in the "other" category.

Summary of OCRWM Contract Activity

DOE operations office contractor name	Total number of contracts	Costs first quarter FY85	Obligations first quarter FY85	Cumulative obligations since inception
Albuquerque:				
Univ. of California	1	$ 2,322,274	$ 12,060,000	$ 28,524,464
Western Electric Co., Inc.	1	3,678,075	17,750,878	50,099,723
Others	4	52,610	0	340,809
Total for quarter	6	6,052,959	29,810,878	78,964,996
Chicago:				
Battelle Memorial Institute	2	10,348,199	13,260,000	178,779,247
Flour Engineers & Construction	1	2,279,800	1,800,000	11,676,000
Others	27	1,678,209	1,869,920	15,737,477
Total for quarter	30	14,306,208	16,929,920	206,192,694
Idaho:				
Others	4	247,241	50,000	3,146,143
Total for quarter	4	247,241	50,000	3,146,143
Nevada:				
Fenix & Scisson Inc.	1	231,190	1,202,000	2,417,614
Department of the Interior[a]	1	0	9,108,000	21,898,000
Reynolds Electric & Energy	1	0	2,729,000	16,464,851
Science Applications Inc.	1	1,327,636	1,750,000	11,183,000
Westinghouse	1	351,000	2,500,449	6,266,220
Others	13	213,420	1,031,180	21,056,579
Total for quarter	18	2,123,246	18,320,629	79,286,264
Oak Ridge:				
Others	4	621,988	1,868,000	5,114,198
Total for quarter	4	621,988	1,868,000	5,114,198
Richland:				
Battelle	1	3,256,573	10,119,814	34,592,305
Morrison Knudson Co., Inc.	1	732,508	1,500,000	12,163,100
Ralph M. Parsons Co.	1	0	3,659,925	9,875,925
Rockwell Hanford Co.	1	7,548,901	42,211,000	120,122,299
Westinghouse Hanford Co.	1	667,710	2,766,330	6,609,038
Others	16	399,362	843,576	4,872,236
Total for quarter	21	12,605,054	61,100,645	188,234,903
San Francisco:				
Univ. of California	1	2,142,062	2,224,000	19,804,000
Others	3	207,691	231,375	2,196,705
Total for quarter	4	2,349,753	2,455,375	22,000,705
Headquarters:				
Roy F. Weston, Inc.	1	2,443,648	5,488,172	18,223,172
Others	24	95,130	255,500	4,331,885
Total for quarter	25	2,538,778	5,743,672	22,555,057
Total (all contractors)	112	$ 40,845,277	$136,279,119	$605,494,960

[a]The Department of the Interior's U.S. Geological Survey is performing onsite work for the Nevada Project Office under contract.

Source: DOE's financial information system.

OVERALL STATUS OF THE NUCLEAR WASTE FUND

Section 302 of NWPA required DOE to transfer unexpended appropriations available on the date of the act's passage from the ongoing nuclear waste program to the waste fund. Subsequently, DOE transferred about $254 million into the fund in fiscal year 1983. Another $4.6 million was transferred into the fund in fiscal year 1984 from other appropriations that had been passed before the fund was established. These funds are to be repaid to the U.S. Treasury with interest. About $3.3 million was paid in interest during fiscal year 1984 and another $474,516 in interest expense had accumulated by December 31, 1984. The fund can also borrow additional money (up to the amount provided in appropriation acts) as needed and invest any funds determined to be in excess of needs.

The following table summarizes the overall status of the fund as of December 31, 1984. It shows that the fund has sufficient cash from the 1983 appropriation transfer and from fees collected to cover all financial requirements through December 1984. OCRWM officials said that repayment of the appropriated debt to the Treasury is dependent on the timing of the receipt of the estimated $2.3 billion in one-time fees from the owners of the nuclear waste generated prior to April 1983, as discussed in chapter 1. Until it is repaid to the Treasury, OCRWM will incur interest on the debt. DOE does not expect owners to decide until mid-1985 how and when they will pay the one-time fee.

Status of the Nuclear Waste Fund
As of December 31, 1984

Beginning cash balance--October 1, 1984	$221,182,019[a]
Receipts from waste owners	90,409,830
Total funds available	311,591,849
Actual disbursements	68,756,816
Cash balance as of December 31, 1984	$242,835,033
Unpaid obligations as of December 31, 1984	$213,164,067
Total appropriated debt owed to Treasury	$258,443,533

[a]This figure is the final end-of-the-year balance. Our first quarterly report (GAO/RCED-85-42), which used preliminary data, showed an end-of-the-year cash balance of $221,249,239.

Source: DOE's financial information system.

OTHER FUNDING SOURCES

A second source of funding available to OCRWM is the Interim Storage Fund, another separate fund authorized by the act. If the fund is used, it will receive fees from utilities that apply for and receive, from the government, interim storage services for spent fuel. Fees for interim storage are to be based on an estimate of prorated costs of storage and related activities, including acquisition, construction, operation, and maintenance of interim storage facilities. To date, no utilities have applied for interim storage services from the government, and DOE officials do not anticipate using interim storage in the near future.

Another potential revenue source is interest received from investing excess cash in the fund. The act states that if DOE determines that the fund contains amounts in excess of current needs, DOE may request the Secretary of the Treasury to invest such amounts or any portion of such amounts as the Secretary determines to be appropriate. The fund can invest in three types of Treasury instruments--bonds, notes, and bills.

OCRWM did not invest funds during the quarter because it did not have a process to accurately account for daily disbursements. Rather than risking investments that might exceed excess cash available, OCRWM officials decided to postpone investing until such a process is set up.

DOE and OCRWM finance officials have developed an investment strategy and expect to be able to accurately account for daily disbursements beginning in January 1985. The greatest investment potential will exist, however, when the fund begins receiving the one-time payments from the owners of waste generated prior to April 7, 1983. We plan to report on OCRWM's investment strategy and its initial investment activity in our next quarterly report.

OCRWM also receives funds through DOE's annual appropriation process for its civilian waste research and development program. These funds, which are maintained in a separate account, are used to conduct research in areas that are not directly related to the geologic repositories and therefore are not financed by the Nuclear Waste Fund. Research efforts include studies on subseabed disposal, fuel integrity, cooperative demonstrations with utilities, and international activities. The table on the next page shows the first quarter of fiscal year 1985 accrued costs for the civilian waste research and development program and total fiscal year 1984 costs.

Costs for Civilian Radioactive Waste R&D Program

	Total FY 84 (costs)	FY 85 first quarter (costs)
	(million)	
Spent fuel storage R&D	$5.72	$2.14
Alternative disposal concepts	7.51	.60
Generic methods and supporting studies	4.04	.35
Program direction	.96	.07
Total	$18.23	$3.16

Source: DOE's financial information system.

NUCLEAR WASTE PROGRAM BUDGET AND REPORTING CODES

Subprogram	Category	Number of Tasks Reported
First repository	Basalt	WBS[a]
	Tuff	WBS
	Salt	WBS
Second repository	Crystalline rock	WBS
	Sedimentary rock	WBS
	Salt	WBS
Monitored retrievable storage	Program management	0
	Integration and systems evaluation	0
	Environmental assessment	0
	Design and analysis support	0
	Facility design	0
	Siting	0
Program management and technical support	Transportation	5
	Systems engineering	0
	Engineering development	0
	Technical support	8
	Program management	5
Debt service	Interest due to the Treasury	2
Capital equipment	First repository	3
	Second repository	3
	Monitored retrievable storage	0
	Program management and support	4
Plant acquisition and construction	First repository	3
	Second repository	3

[a]WBS-work breakdown structure includes 11 tasks as follows: systems; waste package; site; repository; regulatory and institutional; exploratory shafts; test facilities; land acquisition; program management; financial and technical assistance; and other. (See app. II for a description of each task.)

APPENDIX I

Subprogram	Category	Number of Tasks Reported
	Monitored retrievable storage	0
	Program management and technical support	4

WORK BREAKDOWN STRUCTURE TASKS

--The systems task includes systems engineering and analysis performance assessments and management of the project's technical data base.

--The waste package task includes development, design, fabrication, assembly, and testing of the waste package and its component parts.

--The site task includes activities dealing with site characterization and evaluations to (1) determine earth science, environmental, and socioeconomic characteristics of the site and (2) close out sites where further work is not required.

--The repository task deals with all repository work required for site selection and preparation of a construction authorization application, including (1) the development and test program, (2) preparation of designs, and (3) identification of operating, maintenance, and decommissioning requirements.

--The regulatory and institutional task includes activities involving licensing; environmental compliance; communications; and liaison with affected states, Indian tribes, and the public; and the administration of grants under the act.

--The exploratory shaft task deals with (1) all exploratory shaft work, including development, design, construction, operation, maintenance, and decommissioning of exploratory shafts required for detailed site characterization and (2) planning and implementing the in situ testing program.

--The test facilities task includes acquisition, development, operation, maintenance, and decommissioning of test facilities.

--The land acquisition task includes strategy, plans and plan execution for land access and protection, cooperative agreements, and rights and easements. It also includes all efforts in acquiring licenses, permits, leases, titles, withdrawal agreements, cooperative agreements, and any other agreement that indicates an interest in surface and subsurface lands for principal boreholes, exploratory shafts, packaging facilities or repositories.

--The program management task deals with project management and control and with quality assurance, including identifying and defining interfaces among all project elements and integrating the elements with each other.

Two additional tasks have been added to the budget and reporting codes: the "financial and technical assistance" code highlights OCRWM's state and tribe grant program (see p. 36) and the "other" code includes all tasks not included above.

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